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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,269	10/23/2003	Raymond Rui-Feng Liao	2003P10141US01	1537

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Siemens Corporation
Attn: Elsa Keller, Legal Administrator
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER	
MERED, HABTE	

ART UNIT	PAPER NUMBER
2474	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/692,269	Applicant(s) LIAO ET AL.	
	Examiner HABTE MERED	Art Unit 2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18,20 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,20 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/18/2009 has been entered.

2. The amendment filed on 3/6/2009 has been entered and fully considered.

3. Claims 1-18, 20, and 21 are pending. Claims 1, 20, and 21 are the base independent claim. Claim 19 has been previously cancelled. All independent claims are amended.

Response to Arguments

4. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. Balachandran'183 is introduced to teach the amended limitations in independent claims 1 and 21. The newly amended limitations in claim 20 are taught by Knauerhase'847.

5. Examiner wants to emphasize that the current amended limitations have resulted in the withdrawal of the 102 rejections of all independent claims based on the teachings

of Kowaliski'563 and Le'877. However the amended limitations merely recite for an access point to determine its desired traffic load and consequently based on the desired traffic load and the QoS associated to the clients/hosts servicing these clients/hosts by the Access Point. This is not at al a patentable feature and any call admission control of an access point is capable of determining desired traffic load and device QoS as clearly exhibited by Balachandran'183 and Knauerhase'847. The limitations in all the independent claims are so broad almost any wireless network with an access point can read on it. For instance simply claiming a device to be critical without elaborating the criteria for criticality hardly makes it novel or patentable.

6. Finally the Examiner would like to bring to Applicant's attention that the Applicant's disclosure in the published specification in paragraphs 85 through 90 that give specific method of determining packet loss probability using buffer size can be considered novel strictly from the perspective of overcoming the prior arts of record. Examiner is disclosing aspects of Applicant's disclosure that are yet unclaimed and seem to overcome the prior art of record in order to expedite prosecution of the Application by providing compact prosecution.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. **Claims 1, 7-16, and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowalski (US Pub. No. 2003/0063563) in view of Balachandran et al (US Pub. No. 2004/0208183 A1).

Regarding **claim 1**, Kowalski'563 discloses a method for providing a delay guarantee **(See paragraphs 19 and 27 – polling sequence of mobile stations via access point based on QoS and latency guarantees)** for each of a plurality of client devices **(i.e. wireless LAN Stations - see paragraph 26)** associated with an access point **(i.e. "point coordinated function" or PCF or HC or "Hybrid Coordinator" – see paragraphs 26 and 34 and constitutes part of an access point. The access point also includes Band Width Manager and Scheduler)**, comprising:

classifying each of the plurality of client devices **(i.e. wireless LAN stations)** into one of a plurality client device types **(i.e. HC ranks each station according QoS/delay/jitter ranging low to high in paragraph 55 item 3 and also paragraphs 71, 83 and 84 indicating Station 1 classified as lower delay tolerant device and Station 2 as higher delay tolerant device. If a station has many flows then the flows are classified by the HC - see paragraph 59)** based on, at least, a measurement of current and previous traffic loads for each of the plurality of client devices **(i.e. the HC's Band Width Manager constantly monitors the queue sizes of each station and/or flow and reclassifies the station and/or flow to a different QoS/delay/jitter as disclosed in paragraphs 36, 37 and 50)**, and a determination of

whether the client device is critical **(i.e. high QoS or low delay/jitter device can be considered critical as indicated in paragraph 55)**;

determining a desired traffic load **(i.e. the Bandwidth Manager is responsible for determining the desired traffic load based on the Transmission Specification (TSPEC) – see paragraphs 50-51 and 60-66 in general and in particular paragraphs 51 and 66)**;

and allocating shaper intervals to each of the plurality of client devices based on the client device type classification of each of said plurality **(i.e. Station 1 and Station 2 – paragraphs 83-84 and Fig. 2)** of client devices **(HC's scheduler varies TXOP duration and TXOP interval based on the type of device which in turn depends on the level of delay guaranteed for the device (i.e. Stations 1 and 2) as well as queue size as detailed in paragraphs 82-86)** and the desired traffic load wherein the classifying, determining, and allocating are performed by the access point **(Classification of device is done by access point as shown in paragraphs 55, 59, 83, and 84 and determining desired traffic load is done by scheduler and BWM of the access point as detailed in paragraphs 51, 66, and 69 and TXOP allocation is done by access point as detailed by paragraphs 69 and 71)**.

Kowaliski'563 fails to disclose determining a desired traffic load for <u>the access point</u> and allocating shaper intervals to each of the plurality of client devices based on the client device type classification of each of said plurality of client devices and the desired traffic load of the <u>access point</u>.

However, the above mentioned claimed limitations are well known in the art as evidenced by Balachandran'183. In particular, Balachandran'183 discloses determining a desired traffic load for the access point **(Fig. 1 element 115 – paragraphs 60-61)** and allocating shaper intervals **(i.e. assign time slot - see paragraphs 46 and 103)** to each of the plurality of client devices **(Mobiles 105 of Fig. 1)** based on the client device type classification **(user weight – see paragraphs 66 and 109 and equation 14)** of each of said plurality of client devices and the desired traffic load **(i.e. less than over load condition is desired traffic load of base station 115)** of the access point **(Fig. 1 element 115 – paragraphs 60-61) (Balachandran'183 shows in Fig. 2 that access point 115 of Fig. 1 has access point traffic load determining entities namely Admission Control function 220 and slot scheduler 119 as detailed in paragraph 61. The desired traffic load is shown to be any load not causing over load as detailed in paragraph 62. Time slots or shaper intervals are assigned based on the weight of the client devices or mobiles as shown in Fig. 3 and paragraphs 65-66) and condition of the access point load whether it is overload or not as indicated in paragraphs 66 and 103).**

In view of the above, having the method of Kowalski'563 and then given the well established teaching of Balachandran'183, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Kowalski'563 as taught by Balachandran'183, the benefit of the modification results in higher system capacity and increased revenue as suggested by Balachandran'183 in paragraph 139.

Regarding **claim 7**, Kowalski'563 discloses a method, wherein the determining a desired traffic load for the plurality of client devices includes determining a maxMeanAccessTime value associated with the plurality of client devices **(See paragraphs 65 and 66)**.

Regarding **claim 8**, Kowalski'563 discloses a method, wherein the determining a desired traffic load for the plurality of client devices includes determining an access delay time **(i.e. average TXOPS)** for a first of the plurality of client devices **(See paragraphs 62 and 63)**.

Regarding **claim 9**, Kowalski'563 discloses a method, wherein the determining a desired traffic load for the plurality of client devices includes determining a target Inter-Frame Space value associated with the plurality of client devices **(See Table 2 for target Interframe space values).**

Regarding **claim 10**, Kowalski'563 teaches a method, further comprising: allocating bandwidth to each of the plurality of client devices **(See paragraph 55 – the Access Point Scheduler allocating bandwidth to stations)**.

Regarding **claim 11**, Kowalski'563 discloses a method wherein the allocating bandwidth to each of the plurality of client devices includes determining a target frame

rate and shaper interval for a first client device **(See paragraphs 65 and 66 frame rate being determines as well as shaper interval)** in the plurality of client devices based on a guarantee delay time **(See paragraphs 82-84 for guarantee delay time determination)** associated with the first client device and a maxMeanAccess Delay **(i.e. TXOP and TXOP interval see paragraph 66)** value associated with the plurality of client devices **(i.e. stations 1 and 2 as discussed in paragraphs 82-84)**.

Regarding **claim 12,** Kowalski'563 discloses a method of further comprising determining a reference time for first client device in of the plurality of client devices based on a shaper interval associated with the first client device **(See Kowalski'563 paragraph 26, last line shows the AP scheduler transmitting a beacon signal containing reference time to all stations when to transmit).**

Regarding **claim 13**, Kowalski'563 discloses a method, wherein the allocating shaper intervals to each of the plurality of client devices based on client device type classification and the desired traffic load includes allocating a shaper interval to a first client device in the plurality of client devices such that the first client device's interframe interval is larger than the shaper interval **(i.e. in paragraphs 62-63 and 82-84 the shaper interval is modified such that the current interframe interval is greater than the previous shaper interval).**

Regarding **claim 14**, Kowalski’563 discloses a method, further comprising: determining a guarantee delay value for a first of the plurality of client devices **(TXOP and TXOP interval determine the guarantee delay of the stations in paragraphs 62 and 64-66)**.

Regarding **claim 15**, Kowalski’563 discloses a method teaches a method further comprising: receiving a request for new bandwidth **(See Paragraph 67 the station requesting TXOP)**.

Regarding **claim 16**, Kowalski’563 discloses teaches a method, further comprising: determining bandwidth consumption for at least some of the plurality of client devices **(See Paragraph 62 where traffic/bandwidth consumption is measured in the form of queue/buffer size).**

Regarding **claim 18**, Kowalski’563 teaches a method, wherein the access point **(i.e. “point coordinated function" or PCF or HC or “Hybrid Coordinator” – see paragraphs 26 and 34 and constitutes part of an access point. The access point also includes Band Width Manager and Scheduler)**, performs the classifying each of the plurality of client devices into one of a plurality of potential client device types **(i.e. HC ranks each station according QoS/delay/jitter. If a station has many flows then the flows are classified by the HC - see paragraph 59)**;

the determining a desired traffic load for the plurality of client devices **(i.e. the Bandwidth Manager is responsible for determining the desired traffic load based on the Transmission Specification (TSPEC) – see paragraphs 50-51 and 60-66 in general and in particular paragraphs 51 and 66)**;

and the allocating shaper intervals to each of the plurality of client devices based on client device type classification and the desired traffic load **(Classification of device is done by access point as shown in paragraph 59 and determining desired traffic load is done by scheduler and BWM of the access point as detailed in paragraphs 51, 66, and 69 and TXOP allocation is done by access point as detailed by paragraphs 69 and 71)**.

9. **Claims 2-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowalski'563 in view of Balachandran'183 as applied to claim 1 above, and further in view of Gu et al (Daqing Gu and Jinyun Zhang, "QoS Enhancements in IEEE802.11 Wireless Local Area network", IEEE, June 2003, Pages 120-124).

Regarding **claim 2**, the combination of Kowalski'563 and Balachandran'183 fails to teach a method wherein the client device types include critical compliant, critical non-compliant, non-critical satisfied, non-critical regulated, and non-critical non-responsive.

However, the above mentioned claimed limitations are well known in the art as evidenced by Gu. In particular, Gu discloses a method wherein the client device types include critical compliant, critical non-compliant, non-critical satisfied, non-critical

regulated, and non-critical non-responsive **(See Table 1, Page 122 – the 802.11 enhancement for QoS protocol defines 8 different level of priorities and the Applicant's priorities can be associated with any of the priorities in table 1 – in fact one also can argue that Spinar's Active, Recently Active, Pausing and inactive can be mapped into the categories shown in the limitation).**

In view of the above, having the method of Kowalski'563 and Balachandran'183 and then given the well established teaching of Gu, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Kowalski'563 and Balachandran'183 as taught by Gu, the benefit of using various priorities resulting directly from the modification is to provide QoS in a manner compliant with the IEEE 802.11 enhancement for QoS protocol.

Regarding **claim 3**, the combination of Kowalski'563, Balachandran'183, and Gu discloses a method wherein the allocating shaper intervals to each of the plurality of client devices based on client device type classification and the desired traffic load includes allocating a shaper interval of zero to a client device classified as critical compliant **(See also Gu Table 2 on page 123. Assigning zero is literally possible according to Gu's teachings which is based on the enhanced standard but has the drawback of depriving access to low priority devices.).**

Regarding **claim 4**, the combination of Kowalski'563, Balachandran'183, and Gu discloses a method, wherein the allocating shaper intervals to each of the plurality of

client devices based on client device type classification and the desired traffic load includes allocating a shaper interval of zero to a client device classified as critical non-compliant if no traffic overload exists for the access point **(See also Gu Table 2 on page 123. Assigning zero is literally possible according to Gu's teachings which is based on the enhanced standard but has the drawback of depriving access to low priority devices.)**.

Regarding **claim 5**, the combination of Kowalski'563, Balachandran'183, and Gu discloses a method, wherein the allocating shaper intervals to each of the plurality of client devices based on client device type classification and the desired traffic load includes allocating a non-zero shaper interval to a client device in the plurality of client devices classified as critical non-compliant when a traffic overload exists for the access point and the plurality of client devices includes at least one client device classified as critical compliant. **(See GuTable 1 and Table 2 on pages 122-123).**

10. **Claims 6 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowalski'563 in view of Balachandran'183 as applied to claim 1 above, and further in view of Awater et al (US 2007/0109980).

Regarding **claims 6**, the combination of Kowalski'563 and Balachandran'183 fails to teach a method, further comprising: disassociating at least one of the pluralities of client devices from the access point if a traffic overload exists for the access point.

However, the above mentioned claimed limitations are well known in the art as evidenced by Atwater'980. In particular, Atwater'980 discloses a method, further comprising: disassociating at least one of the plurality of client devices from the access point if a traffic overload exists for the access point **(See Figure 4, step 50 and Figure 5, step 58).**

In view of the above, having the method of Kowalski'563 and Balachandran'183 and the well established teaching of Atwater'980, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Kowalski'563 and Balachandran'183 as taught by Atwater'980, the benefit being to use load balancing is to improve roaming as detailed by Awater in paragraph 14.

Regarding **claim 17**, it is noted that the limitations of claim 17 corresponds to that of claim 6 as discussed above, please see the Examiner's comments with respect to claim 6 as set forth in the rejection above.

11. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kowaliski'563 in view of Knauerhase et al (US Pub. No. 2007/0208847 A1).

Regarding **claim 20**, Le'877 discloses an article of manufacture comprising:

a computer readable medium **(i.e. Fig 3. element 135)** having stored thereon instructions which, when executed by a processor, cause the processor **(Fig. 3 access network 110' has access point 115' has to have a processor like element 130 and software running on the processor)** to:

classify each of a plurality of client devices **(i.e. Figs. 3 elements 105a-e)** into one of a plurality of client device types **(i.e. Fig. 4 step 150 and Column 4, Lines 40-43)** based on, at least, a measurement of current and previous traffic loads for each of the plurality of client devices **(i.e. based on traffic data measured and recorded by Fig. 3 prioritizer 130 the access points ranks the devices based on priority)**, and a determination of whether the client device is critical **(i.e. the device with the highest priority can be considered critical and device 105A is critical as it is assigned unassigned slots as shown in Table 2)**;

determine a desired traffic load **(i.e. the prioritizer 130 continuously monitors the traffic of each device and determines new need as shown in Table 3 - the need for device 105A decreased and it is now allotted only two additional slots)**;

and allocate shaper intervals **(i.e. varying number of slots assigned to devices in Tables 1-3)** to each of the plurality of client devices based on the client device type classification and the desired traffic load (**i.e. priority ranking - see also Fig. 4 steps 150 and 155)** wherein the classifying, determining, and allocating are performed by the access point **(Classification of device, allocation of time slots,**

determining all future is done by Fig. 3 access point 115' component 130 also referred to as prioritizer).

Le'877 fails to disclose determining a desired traffic load for the access point and allocating shaper intervals to each of the plurality of client devices based on the desired traffic load of the access point.

However, the above mentioned claimed limitations are well known in the art as evidenced by Knauerhase'847. In particular, Knauerhase'847 discloses determining a desired traffic load **(i.e. Fig. 2 step 202)** for the access point **(i.e. Access Point 112 of Fig. 1)** and allocating shaper intervals **(i.e. Fig. 2 step 204 increase beacon interval)** to each of the plurality of client devices **(i.e. clients 108 and 110 of Fig. 1)** based on the desired traffic load **(i.e. load determined at step 202 of Fig. 2)** of the access point **(See Figs. 1-3 and paragraphs 21 and 25-28 for details)**.

In view of the above, having the article of Kowalski'563 and the well established teaching of Knauerhase'847, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Kowalski'563 as taught by Knauerhase'847, the benefit being to use load balancing is to improve roaming as detailed by Knauerhase'847 in paragraphs 10 and 17.

12. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kowalski'563 in view of Del Prado Pavon et al (US Pub. No. 20040047351) and Balachandran'183.

Regarding **claim 21**, Del Prado Pavon'351 discloses an apparatus **(i.e. Figure 1, element 125 QoS AP)**, comprising: a processor **(The Access Point of Figure 1 is further shown in Figure 3 with different network Layers and has to have a processor to implement the Network layers)**;

a communication port **(i.e. physical Layer 375, 380 emulates a physical port)** coupled to the processor **(i.e. needed to run the different network layers)** and adapted to communicate with at least one device **(QAP 125 of Figure 1 communicates with devices QSTAs 130, 135 as shown in Figure 1)**; and

a storage device **Figure 3, element 390** coupled to the processor and storing instructions adapted to be executed by the processor **(See Figure 3, element 390 and paragraph 62)**.

Del Prado Pavon'351 fails to disclose an apparatus that classifies each of a plurality of client devices into one of a plurality of potential client device types based on, at least, a measurement of current and previous traffic loads for each of the plurality of client devices, and a determination of whether the client device is critical; determines a desired traffic load for the plurality of client devices; and allocates shaper intervals to each of the plurality of client devices based on the client device type classification <u>of each of said plurality of client devices</u> and said desired traffic load wherein the classifying, determining, and allocating are performed by the access point.

However, the above mentioned claimed limitations are well known in the art as evidenced by Kowalski'563. Kowalski'563 discloses an apparatus that classifies each of a plurality of client devices **(i.e. wireless LAN stations)** into one of a plurality of

potential client device types **(i.e. HC ranks each station according QoS/delay/jitter ranging low to high in paragraph 55 item 3 and also paragraphs 71, 83 and 84 indicating Station 1 classified as lower delay tolerant device and Station 2 as higher delay tolerant device. If a station has many flows then the flows are classified by the HC - see paragraph 59)** based on, at least, a measurement of current and previous traffic loads for each of the plurality of client devices **(i.e. the HC's Band Width Manager constantly monitors the queue sizes of each station and/or flow and reclassifies the station and/or flow to a different QoS/delay/jitter as disclosed in paragraphs 36, 37 and 50)**, and a determination of whether the client device is critical **(i.e. high QoS or low delay/jitter device can be considered critical as indicated in paragraph 55)**;

determine a desired traffic load **(i.e. the Bandwidth Manager is responsible for determining the desired traffic load based on the Transmission Specification (TSPEC) – see paragraphs 50-51 and 60-66 in general and in particular paragraphs 51 and 66)**;

and allocate shaper intervals to each of the plurality of client devices based on the client device type classification **(HC's scheduler varies TXOP duration and TXOP interval based on the type of device which in turn depends on the level of delay guaranteed for the device as well as queue size as detailed in paragraphs 82-86)** of each of said plurality **(i.e. Station 1 and Station 2 – paragraphs 83-84 and Fig. 2)** of client devices **(i.e. HC ranks each station according QoS/delay/jitter ranging low to high in paragraph 55 item 3 and also paragraphs 71, 83 and 84 indicating**

Station 1 classified as lower delay tolerant device and Station 2 as higher delay tolerant device) and the desired traffic load wherein the classifying, determining, and allocating are performed by the access point **(Classification of device is done by access point as shown in paragraph 59 and determining desired traffic load is done by scheduler and BWM of the access point as detailed in paragraphs 51, 66, and 69 and TXOP allocation is done by access point as detailed by paragraphs 69 and 71)**.

In view of the above, having the apparatus of Del Prado Pavon'351 and then given the well established teaching of Kowalski'563, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the apparatus of Del Prado Pavon'351 as taught by Kowalski'563, since Kowalski'563 states in paragraph 15 that such a modification results in a scheduler for providing quality of service in a local area network.

Del Prado Pavon'351 fails to disclose determining a desired traffic load for the access point and allocating shaper intervals to each of the plurality of client devices based on the client device type classification of each of said plurality of client devices and the desired traffic load of the access point.

However, the above mentioned claimed limitations are well known in the art as evidenced by Balachandran'183. In particular, Balachandran'183 discloses determining a desired traffic load for the access point **(Fig. 1 element 115 – paragraphs 60-61)** and allocating shaper intervals **(i.e. assign time slot - see paragraphs 46 and 103)** to each of the plurality of client devices **(Mobiles 105 of Fig. 1)** based on the client device type

classification **(user weight – see paragraphs 66 and 109 and equation 14)** of each of said plurality of client devices and the desired traffic load **(i.e. less than over load condition is desired traffic load of base station 115)** of the access point **(Fig. 1 element 115 – paragraphs 60-61) (Balachandran'183 shows in Fig. 2 that access point 115 of Fig. 1 has access point traffic load determining entities namely Admission Control function 220 and slot scheduler 119 as detailed in paragraph 61. The desired traffic load is shown to be any load not causing over load as detailed in paragraph 62. Time slots or shaper intervals are assigned based on the weight of the client devices or mobiles as shown in Fig. 3 and paragraphs 65-66) and condition of the access point load whether it is overload or not as indicated in paragraphs 66 and 103).**

In view of the above, having the apparatus of Del Prado Pavon’351 and then given the well established teaching of Balachandran'183, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the apparatus of Del Prado Pavon’351 as taught by Balachandran'183, the benefit of the modification results in higher system capacity and increased revenue as suggested by Balachandran'183 in paragraph 139.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HABTE MERED whose telephone number is (571)272-6046. The examiner can normally be reached on Monday to Friday 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2474

/Habte Mered/
Examiner, Art Unit 2474
11-06-09